

RECEIVED
OCT 10 2002
TECH CENTER 1600/2900



1600

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/441,411

DATE: 10/01/2002

TIME: 15:46:17

Input Set : D:\409.app.txt

Output Set: N:\CRF4\10012002\I441411.raw

ENTERED

```

4 <110> APPLICANT: Scholler, Nathalie B.
5      Disis, Mary L.
6      Hellstrom, Ingegerd
7      Hellstrom, Karl Erik
9 <120> TITLE OF INVENTION: SURFACE RECEPTOR ANTIGEN VACCINES
12 <130> FILE REFERENCE: 730033.409
14 <140> CURRENT APPLICATION NUMBER: US 09/441,411
15 <141> CURRENT FILING DATE: 1999-11-16
17 <160> NUMBER OF SEQ ID NOS: 26
19 <170> SOFTWARE: FastSEQ for Windows Version 4.0
21 <210> SEQ ID NO 1
22 <211> LENGTH: 29
23 <212> TYPE: DNA
24 <213> ORGANISM: Artificial Sequence
26 <220> FEATURE:
27 <223> OTHER INFORMATION: PCR primer
29 <400> SEQUENCE: 1
30 ctaagcttat ggcttgcaat tgtcagttg                29
32 <210> SEQ ID NO: 2
33 <211> LENGTH: 29
34 <212> TYPE: DNA
35 <213> ORGANISM: Artificial Sequence
37 <220> FEATURE:
38 <223> OTHER INFORMATION: PCR primer
40 <400> SEQUENCE: 2
41 gtatcgatct aaaggaagac ggtctgttc                29
43 <210> SEQ ID NO: 3
44 <211> LENGTH: 27
45 <212> TYPE: DNA
46 <213> ORGANISM: Artificial Sequence
48 <220> FEATURE:
49 <223> OTHER INFORMATION: PCR primer
51 <400> SEQUENCE: 3
52 cgaagcttgt tccagaactt acggaag                27
54 <210> SEQ ID NO: 4
55 <211> LENGTH: 26
56 <212> TYPE: DNA
57 <213> ORGANISM: Artificial Sequence
59 <220> FEATURE:
60 <223> OTHER INFORMATION: PCR primer
62 <400> SEQUENCE: 4
63 cgategatct ttcttcaggc tctcac                26
65 <210> SEQ ID NO: 5

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/441,411

DATE: 10/01/2002

TIME: 15:46:17

Input Set : D:\409.app.txt

Output Set: N:\CRF4\10012002\I441411.raw

66 <211> LENGTH: 4473

67 <212> TYPE: DNA

68 <213> ORGANISM: Homo sapiens

70 <400> SEQUENCE: 5

```

71 aaggggaggt aacctggcc cctttggtcg gggccccggg cagccgcgcg ccccttccca      60
72 cggggccctt tactgcgcgc cgcgcgcgcg cccacccct cgcagacccc cgcgccccgc      120
73 gccctcccag cggggtccag cgggagccat ggggcccggg ccgcagtgcg caccatggag      180
74 ctggcggcct tgtgcgcgtg ggggtcctc ctcgcctct tgcctcccg agccgcgagc      240
75 acccaagtgt gcaccggcac agacatgaag ctgcggctcc ctgccagtc cgcagacccac      300
76 ctggacatgc tccgccacct ctaccagggc tgccaggtgg tgcaggaaa cctggaactc      360
77 acctacctgc ccaccaatgc cagcctgtcc ttctgcagg atatccagga ggtgcagggc      420
78 tacgtgctca tcgctcaca ccaagtgcgc caggtccccc tgcagaggct gcggattgtg      480
79 cgaggcaccc agctctttga ggacaactat gccctggccg tgcagacaa tggagaccgc      540
80 ctgaacaata ccacctctgt cacaggggcc tccccaggag gcctgcggga gctgcagctt      600
81 cgaagcctca cagagatctt gaaaggaggg gtcttgatcc agcgaaccc ccagctctgc      660
82 taccaggaca cgattttgtg gaaggacatc ttccacaaga acaaccagct ggctctcaca      720
83 ctgatagaca ccaaccgctc tcgggcctgc cacctgttt ctccgatgtg taagggtccc      780
84 cgctgctggg gagagagttc tgaggattgt cagagcctga cgcgcactgt ctgtgccgtg      840
85 ggctgtgccc gctgcaaggg gccactgccc actgactgct gccatgagca gtgtgctgcc      900
86 ggctgcacgg gccccaagca ctctgactgc ctggcctgcc tccacttcaa ccacagtggc      960
87 atctgtgagc tgcaactgcc agccctggtc acctacaaca cagacacgtt tgagtccatg      1020
88 cccaatcccg agggcccgta tacattcggc gccagctgtg tgactgcctg tccctacaac      1080
89 tacctttcta cggacgtggg atcctgcacc ctgctctgcc ccctgcacaa ccaagaggtg      1140
90 acagcagagg atggaacaca gcgggtgtgag aagtgcagca agccctgtgc ccgagtgtgc      1200
91 tatggtctgg gcatggagca ctgcgagag gtgagggcag ttaccagtgc caatatccag      1260
92 gagtttctgt gctgcaagaa gatctttggg agcctggcat ttctgcggga gagctttgat      1320
93 ggggacccag cctccaacac tgccccgctc cagccagagc agctccaagt gtttgagact      1380
94 ctggaagaga tcacaggtta cctatacatc tcagcatggc cggacagcct gcctgacctc      1440
95 agcgtcttcc agaacctgca agtaatccgg ggaagaaatc tgcacaatgg cgcctactcg      1500
96 ctgacctgac aagggtcggg catcagctgg ctggggctgc gctcactgag ggaactgggc      1560
97 agtggactgg cctcatcca ccataacacc cactctgct tcgtgcacac ggtgccctgg      1620
98 gaccagctct ttgcgaaccc gcaccaagct ctgctccaca ctgccaaccc gccagaggac      1680
99 gagtgtgtgg gcgagggcct ggccctgccac cagctgtgcg cccgagggca ctgctggggt      1740
100 ccagggccca cccagtgtgt caactgcagc cagttccttc ggggccagga gtgcgtggag      1800
101 gaatgccgag tactgcaggg gctccccagg gagtatgtga atgccaggca ctgtttgccg      1860
102 tgccacctg agtgtcagcc ccagaatggc tcagtgcact gttttggacc ggaggctgac      1920
103 cagtgtgtgg cctgtgcca ctataaggac cctccctctt gcgtggcccg ctgccccagc      1980
104 ggtgtgaaac ctgacctctc ctacatgccc atctggaagt ttccagatga ggagggcgca      2040
105 tgccagcctt gccccatcaa ctgcacccac tctgtgtgg acctggatga caagggtgc      2100
106 cccgcccagc agagagccag cctctgacg tccatcatct ctgcggtggg tggcattctg      2160
107 ctggctcgtg tcttgggggt ggtctttggg atcctcatca agcgcaggca gcagaagatc      2220
108 cggaagtaca cgatgcggag actgctgcag gaaacggagc tgggtggagcc gctgacacct      2280
109 agcggagcga tgcccaacca ggcgcagatg cggatcctga aagagacgga gctgaggaag      2340
110 gtgaaggtgc ttggatctgc cgcttttggc acagctotaca agggcatctg gatccctgat      2400
111 ggggagaatg tgaaaattcc agtgccatc aaagtgttga gggaaaacac atcccccaaa      2460
112 gccacaagaag aaatctttaga cgaagcatac gtgatggctg gtgtgggctc cccatatgtc      2520
113 tccgccttcc tgggcatctg cctgacatcc acggtgcagc tgggtgacaca gcttatgccc      2580
114 tatggtgccc tcttagacca tgtccgggaa aaccgcggac gcctgggctc ccaggacctg      2640
115 ctgaactggt gtatgcagat tgccaagggg atgagctacc tggaggatgt gcggctcgta      2700

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/441,411

DATE: 10/01/2002

TIME: 15:46:18

Input Set : D:\409.app.txt

Output Set: N:\CRF4\10012002\I441411.raw

```

116 cacagggact tggccgctcg gaacgtgctg gtcaagagtc ccaaccatgt caaaattaca 2760
117 gacttcgggc tggctcggct gctggacatt gacgagacag agtaccatgc agatgggggc 2820
118 aaggtgcccc tcaagtggat ggcgctggag tccattctcc gccggcgggt caccaccag 2880
119 agtgatgtgt ggagtattgg tgtgactgtg tgggagctga tgacttttgg ggccaaacct 2940
120 tacgatggga tccagcccg ggagatccct gacctgctgg aaaaggggga gcggtgccc 3000
121 cagcccccca tctgcacat tgatgtctac atgatcatgg tcaaatgttg gatgattgac 3060
122 tctgaatgtc ggccaagatt ccgggagttg gtgtctgaat tctcccgcat ggccagggac 3120
123 ccccgagcgt ttgtggtcat ccagaatgag gacttgggce cagccagtcc cttggacagc 3180
124 accttctacc gctcactgct ggaggacgat gacatggggg acctggtgga tgctgaggag 3240
125 tatctggtac cccagcaggg cttcttctgt ccagacctg cccggggcgc tgggggcatg 3300
126 gtccaccaca ggcaccgcag ctcatctacc aggagtggcg gtggggacct gacactaggg 3360
127 ctggagccct ctgaagagga ggcaccaggg tctccactgg caccctccga aggggctggc 3420
128 tccgatgtat ttgatggtga cctgggaatg ggggcagcca aggggctgca aagcctcccc 3480
129 acacatgacc ccagccctct acagcggtag agtgaggacc ccacagtacc cctgccctct 3540
130 gagactgatg gctacgttgc cccctgacc tgcagcccc agcctgaata tgtgaaccag 3600
131 ccagatgttc ggcaccagcc cctctgccc cgagagggcc ctctgctgc tgcgcacct 3660
132 gctggtgcca cctggaag gcccagact ctctccccag ggaagaatgg ggtcgtcaa 3720
133 gacgtttttg ccttggggg tgcctggag aaccccgagt acttgacacc ccaggaggga 3780
134 gctgccccct agccccacc tctctctgcc ttcagccag ccttcgaca cctctattac 3840
135 tgggaccagg acccaccaga gcggggggct ccaccagca ccttcaaagg gacacctacg 3900
136 gcagagaacc cagagtacct gggctctggac gtgccagtgt gaaccagaag gccaaagtcg 3960
137 cagaagccct gatgtgtcct caggagacag ggaaggcctg acttctgctg gcacaaagag 4020
138 gtgggagggc cctccgacca cttccagggg aacctgccat gccaggaacc tgcctaagg 4080
139 aaccttcctt cctgcttgag ttccagatg gctggaagg gtccagctc gttggaagag 4140
140 gaacagcact ggggagtctt tgtggattct gagccctgc ccaatgagac tctagggtcc 4200
141 agtggatgcc acagcccagc ttggcccttt cctccagat cctgggtact gaaagcctta 4260
142 gggaagctgg cctgagagg gaagcggccc taagggagtg tctaagaaca aaagcgacc 4320
143 attcagagac tgccttgaa acctagtact gcccccatg aggaaggaac agcaatggtg 4380
144 tcagtatcca ggctttgtac agagtgttt tctgtttagt tttactttt tttgtttgt 4440
145 ttttttaaag atgaaataaa gaccagggg gag 4473

```

147 <210> SEQ ID NO: 6

148 <211> LENGTH: 1255

149 <212> TYPE: PRT

150 <213> ORGANISM: Homo sapiens

152 <400> SEQUENCE: 6

```

153 Met Glu Leu Ala Ala Leu Cys Arg Trp Gly Leu Leu Leu Ala Leu Leu
154 1 5 10 15
155 Pro Pro Gly Ala Ala Ser Thr Gln Val Cys Thr Gly Thr Asp Met Lys
156 20 25 30
157 Leu Arg Leu Pro Ala Ser Pro Glu Thr His Leu Asp Met Leu Arg His
158 35 40 45
159 Leu Tyr Gln Gly Cys Gln Val Gln Gly Asn Leu Glu Leu Thr Tyr
160 50 55 60
161 Leu Pro Thr Asn Ala Ser Leu Ser Phe Leu Gln Asp Ile Gln Glu Val
162 65 70 75 80
163 Gln Gly Tyr Val Leu Ile Ala His Asn Gln Val Arg Gln Val Pro Leu
164 85 90 95
165 Gln Arg Leu Arg Ile Val Arg Gly Thr Gln Leu Phe Glu Asp Asn Tyr
166 100 105 110

```

RAW SEQUENCE LISTING

DATE: 10/01/2002

PATENT APPLICATION: US/09/441,411

TIME: 15:46:18

Input Set : D:\409.app.txt

Output Set: N:\CRF4\10012002\I441411.raw

```

167 Ala Leu Ala Val Leu Asp Asn Gly Asp Pro Leu Asn Asn Thr Thr Pro
168      115      120      125
169 Val Thr Gly Ala Ser Pro Gly Gly Leu Arg Glu Leu Gln Leu Arg Ser
170      130      135      140
171 Leu Thr Glu Ile Leu Lys Gly Gly Val Leu Ile Gln Arg Asn Pro Gln
172 145      150      155      160
173 Leu Cys Tyr Gln Asp Thr Ile Leu Trp Lys Asp Ile Phe His Lys Asn
174      165      170      175
175 Asn Gln Leu Ala Leu Thr Leu Ile Asp Thr Asn Arg Ser Arg Ala Cys
176      180      185      190
177 His Pro Cys Ser Pro Met Cys Lys Gly Ser Arg Cys Trp Gly Glu Ser
178      195      200      205
179 Ser Glu Asp Cys Gln Ser Leu Thr Arg Thr Val Cys Ala Gly Gly Cys
180      210      215      220
181 Ala Arg Cys Lys Gly Pro Leu Pro Thr Asp Cys Cys His Glu Gln Cys
182 225      230      235      240
183 Ala Ala Gly Cys Thr Gly Pro Lys His Ser Asp Cys Leu Ala Cys Leu
184      245      250      255
185 His Phe Asn His Ser Gly Ile Cys Glu Leu His Cys Pro Ala Leu Val
186      260      265      270
187 Thr Tyr Asn Thr Asp Thr Phe Glu Ser Met Pro Asn Pro Glu Gly Arg
188      275      280      285
189 Tyr Thr Phe Gly Ala Ser Cys Val Thr Ala Cys Pro Tyr Asn Tyr Leu
190      290      295      300
191 Ser Thr Asp Val Gly Ser Cys Thr Leu Val Cys Pro Leu His Asn Gln
192 305      310      315      320
193 Glu Val Thr Ala Glu Asp Gly Thr Gln Arg Cys Glu Lys Cys Ser Lys
194      325      330      335
195 Pro Cys Ala Arg Val Cys Tyr Gly Leu Gly Met Glu His Leu Arg Glu
196      340      345      350
197 Val Arg Ala Val Thr Ser Ala Asn Ile Gln Glu Phe Ala Gly Cys Lys
198      355      360      365
199 Lys Ile Phe Gly Ser Leu Ala Phe Leu Pro Glu Ser Phe Asp Gly Asp
200      370      375      380
201 Pro Ala Ser Asn Thr Ala Pro Leu Gln Pro Glu Gln Leu Gln Val Phe
202 385      390      395      400
203 Glu Thr Leu Glu Glu Ile Thr Gly Tyr Leu Tyr Ile Ser Ala Trp Pro
204      405      410      415
205 Asp Ser Leu Pro Asp Leu Ser Val Phe Gln Asn Leu Gln Val Ile Arg
206      420      425      430
207 Gly Arg Ile Leu His Asn Gly Ala Tyr Ser Leu Thr Leu Gln Gly Leu
208      435      440      445
209 Gly Ile Ser Trp Leu Gly Leu Arg Ser Leu Arg Glu Leu Gly Ser Gly
210      450      455      460
211 Leu Ala Leu Ile His His Asn Thr His Leu Cys Phe Val His Thr Val
212 465      470      475      480
213 Pro Trp Asp Gln Leu Phe Arg Asn Pro His Gln Ala Leu Leu His Thr
214      485      490      495
215 Ala Asn Arg Pro Glu Asp Glu Cys Val Gly Glu Gly Leu Ala Cys His

```

DATE: 10/01/2002

PATENT APPLICATION: US/09/441,411

TIME: 15:46:18

Input Set : D:\409.app.txt

Output Set: N:\CRF4\10012002\I441411.raw

216				500				505				510				
217	Gln	Leu	Cys	Ala	Arg	Gly	His	Cys	Trp	Gly	Pro	Gly	Pro	Thr	Gln	Cys
218	515							520				525				
219	Val	Asn	Cys	Ser	Gln	Phe	Leu	Arg	Gly	Gln	Glu	Cys	Val	Glu	Glu	Cys
220	530							535				540				
221	Arg	Val	Leu	Gln	Gly	Leu	Pro	Arg	Glu	Tyr	Val	Asn	Ala	Arg	His	Cys
222	545							550				555				
223	Leu	Pro	Cys	His	Pro	Glu	Cys	Gln	Pro	Gln	Asn	Gly	Ser	Val	Thr	Cys
224				565								570				
225	Phe	Gly	Pro	Glu	Ala	Asp	Gln	Cys	Val	Ala	Cys	Ala	His	Tyr	Lys	Asp
226				580								585				
227	Pro	Pro	Phe	Cys	Val	Ala	Arg	Cys	Pro	Ser	Gly	Val	Lys	Pro	Asp	Leu
228	595							600				605				
229	Ser	Tyr	Met	Pro	Ile	Trp	Lys	Phe	Pro	Asp	Glu	Glu	Gly	Ala	Cys	Gln
230	610							615				620				
231	Pro	Cys	Pro	Ile	Asn	Cys	Thr	His	Ser	Cys	Val	Asp	Leu	Asp	Asp	Lys
232	625							630				635				
233	Gly	Cys	Pro	Ala	Glu	Gln	Arg	Ala	Ser	Pro	Leu	Thr	Ser	Ile	Ile	Ser
234				645								650				
235	Ala	Val	Val	Gly	Ile	Leu	Leu	Val	Val	Val	Leu	Gly	Val	Val	Phe	Gly
236				660								665				
237	Ile	Leu	Ile	Lys	Arg	Arg	Gln	Gln	Lys	Ile	Arg	Lys	Tyr	Thr	Met	Arg
238	675							680				685				
239	Arg	Leu	Leu	Gln	Glu	Thr	Glu	Leu	Val	Glu	Pro	Leu	Thr	Pro	Ser	Gly
240	690							695				700				
241	Ala	Met	Pro	Asn	Gln	Ala	Gln	Met	Arg	Ile	Leu	Lys	Glu	Thr	Glu	Leu
242	705							710				715				
243	Arg	Lys	Val	Lys	Val	Leu	Gly	Ser	Gly	Ala	Phe	Gly	Thr	Val	Tyr	Lys
244				725								730				
245	Gly	Ile	Trp	Ile	Pro	Asp	Gly	Glu	Asn	Val	Lys	Ile	Pro	Val	Ala	Ile
246				740								745				
247	Lys	Val	Leu	Arg	Glu	Asn	Thr	Ser	Pro	Lys	Ala	Asn	Lys	Glu	Ile	Leu
248	755							760				765				
249	Asp	Glu	Ala	Tyr	Val	Met	Ala	Gly	Val	Gly	Ser	Pro	Tyr	Val	Ser	Arg
250	770							775				780				
251	Leu	Leu	Gly	Ile	Cys	Leu	Thr	Ser	Thr	Val	Gln	Leu	Val	Thr	Gln	Leu
252	785							790				795				
253	Met	Pro	Tyr	Gly	Cys	Leu	Leu	Asp	His	Val	Arg	Glu	Asn	Arg	Gly	Arg
254				805								810				
255	Leu	Gly	Ser	Gln	Asp	Leu	Leu	Asn	Trp	Cys	Met	Gln	Ile	Ala	Lys	Gly
256				820								825				
257	Met	Ser	Tyr	Leu	Glu	Asp	Val	Arg	Leu	Val	His	Arg	Asp	Leu	Ala	Ala
258	835							840				845				
259	Arg	Asn	Val	Leu	Val	Lys	Ser	Pro	Asn	His	Val	Lys	Ile	Thr	Asp	Phe
260	850							855				860				
261	Gly	Leu	Ala	Arg	Leu	Leu	Asp	Ile	Asp	Glu	Thr	Glu	Tyr	His	Ala	Asp
262	865							870				875				
263	Gly	Gly	Lys	Val	Pro	Ile	Lys	Trp	Met	Ala	Leu	Glu	Ser	Ile	Leu	Arg
264				885								890				

VERIFICATION SUMMARY

DATE: 10/01/2002

PATENT APPLICATION: US/09/441,411

TIME: 15:46:19

Input Set : D:\409.app.txt

Output Set: N:\CRF4\10012002\I441411.raw